In the Action, Claims 1-6, 8-11, 15-16, 18-26 and 30 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 4,311,735 (Young) and Claims 7, 17 and 31 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Young.

Applicant respectfully traverses.

The present invention as defined by independent Claim 1 provides an impregnation process, the steps of which include:

a) providing at least one mobile vessel in which impregnation of a porous article can be carried out;

b) providing a series of stations defining a selection of impregnation sequences;

c) sequentially directing said at least one vessel to at least one selected station chosen from said series of stations; and

d) performing the at least one specific impregnation step at the at least one selected station.

The vessel set forth in step a) includes a chamber for containing a flowable impregnating composition and at least one porous article to be impregnated. Each of the stations set forth in step b) performs at least one specific impregnation step on the at least one porous article within the at least one vessel.

The present invention as defined by independent Claim 9 provides an impregnation process, the steps of which are as recited in Claim 1 and further includes: repeating steps c) and

d) until the at least one porous article is impregnated with the flowable impregnating composition.

The present invention as defined by independent Claim 18 provides an impregnation system for impregnating porous articles. The system includes:

(a) a series of stations defining a selection of impregnated sequences;

(b) at least one mobile vessel for retaining a flowable impregnating composition and the one or more porous articles to be impregnated, for transporting the composition and the at least one article to the series of stations and for providing a closed environment for conducting the impregnation steps; and

(c) means for directing the vessel sequentially to the series of stations.

Each of the stations performs at lease one specific impregnation step for impregnating one or more porous articles.

The premise of the subject invention is the "transporting" of vessels (along with its content of liquid impregnant and porous articles) from station to station, where different equipment is waiting in queue for the arrival of the vessel, for execution of various processes on the vessel and its contents.

The Action cites Young against the rejected claims. More specifically, there are a number of "fixed" process vessels

described by Young, in which the porous articles are transported therebetween. There is no implication whatsoever that the vessels themselves are transported in any way.

It is elementary that in order to anticipate a claim under examination, the document cited against that claim must, within its four corners, meet all of the recited limitations of the claim in precisely the same manner. Failing such precise disclosure, that cited document is not an effective Section 102 reference and cannot anticipate the claimed invention.

Thus, since the rejected independent claims each speak to a mobile vessel or the transporting of vessels, these claims cannot be anticipated by Young, which discloses a fixed vessel.

Accordingly, reconsideration and withdrawal of the Section 102 rejections are respectfully requested.

As for the Section 103 rejections, it is elementary that a document cited against claims under examination must be considered for the entirety of its disclosure. The instant Action has failed to do that.

Applicant respectfully submits the beneficial effects of the present invention would not be present without the transporting of the mobile vessel, which is contrary to, and taught away from by Young.

As described above and in the subject application, in existing porosity sealing impregnation systems, such as Young, processing vessels remain stationary relative to the porous parts

and fluid impregnant, and the porous parts and fluid impregnant are transported therebetween. In other words, the vessel having porous parts therein remains in a single stationary position for the duration of the impregnation process. The main impregnation steps, i.e., vacuum, pressurization and centrifuging operations, all take place within this singular vessel.

One disadvantage with this approach is that each of the main impregnation steps within the impregnation process is of lengthy duration. Moreover, these steps must be performed sequentially and therefore, under the known processes, it is necessary to wait for one step to be completed before the next step can begin. A single stationary vessel exacerbates the problem by ensuring a lengthy process -- one vessel for all steps within the system translates into a lengthy production time and the proliferation of non-impregnated and partially-impregnated parts. The number of porous parts which are treated during a single cycle must therefore be calculated to match the overall needs of the production line. Consequently, this usually results in very large batch sizes, a situation which is contrary to modern day manufacturing methods which employ continuous throughput of small batches.

In addition, the use of a single large stationary vessel increases the magnitude of damage to the equipment in the event of a malfunction. Porosity sealing impregnation systems are very complex and expensive to build, maintain and operate.

When liquid impregnant inadvertently cures within such equipment, the machines seize and malfunction and require expensive maintenance and repair. This also results in significant "lost production" since there was only one vessel in the manufacturing line and it is out of service.

Further, if a problem occurs during one operation or step within the entire impregnation process, a large batch of parts can be ruined, reducing the number of porous articles that can be completed within the impregnation cycle and adding to the overall duration of an already extensive and time-consuming process. Such limitations not only lead to increased manufacturing costs due to lost time and materials, but also forestall further processing while troubleshooting procedures are executed to determine the source of manufacturing malfunctions.

Since the use of a single stationary processing vessel inhibits the efficient processing of porous articles in a manufacturing setting and promotes decimation of both machinery and parts, it is desirable, as the present invention does, to provide a system which overcomes these deficiencies.

Claim 7, which defines the impregnation process with reference to dependant Claims 5 and 6, calls for the impregnation process set forth in Claim 1, further including the step of reclaiming the flowable impregnating composition, where the series of stations includes a flowable impregnating composition retrieval station where the reclaiming step is performed, and

where the reclaiming step includes tipping the at least one vessel horizontally so as to pour the impregnating composition therefrom.

Claim 17, which defines the impregnation process with reference to dependant Claims 15 and 16, calls for the impregnation process set forth in Claim 9, further including the step of reclaiming the flowable impregnation composition, where the series of stations includes a flowable impregnating composition retrieval station where the reclaiming step is performed, wherein the reclaiming step includes tipping the at least one vessel horizontally so as to pour the flowable impregnating composition therefrom.

Claim 31, which defines the impregnation system with reference to dependant Claim 18, calls for the impregnation system set forth in Claim 18, where the directing means includes a hoist, conveyor, rails, robot, human operator, forklift or other means for transporting the at least one mobile vessel to each of the stations.

Unlike the present invention, such as defined by Claims 7, 17 or 31, Young uses fixed or stationary vessels in his impregnation process. The use of fixed or stationary vessels avoids the complexity of various plumbing, electronic, and hydraulic connections attached to the typical process vessel. The present invention looks past conventional thinking, such as taught by Young, and identifies the advantages of "lean

manufacturing" and "small batches", despite the added plumbing, electronic and hydraulic connection issues.

Simply put, it would have been counterintuitive to add additional labor and material cost, such as from the required plumbing, electronic and hydraulic connections, to Young to achieve the advantages of the present invention. Those persons of ordinary skill in the art look to simplify processes and systems, not render them more complex and expensive, to achieve desired advantages. Thus it would not have been obvious from Young to transport a vessel for impregnation from station to station, rather than just moving the porous articles as he has done.

As such, Young does not render obvious Claims 7, 17 or 31 of the present invention.

At least for these reasons, favorable reconsideration and withdrawal of the Section 103 rejections are respectfully requested.

Applicant has demonstrated above that Young fails to teach or suggest the present invention, and as such respectfully request reconsideration and withdrawal of all rejections advanced in the Action.